

Abs Jour: Referat Zh.-Biol., No 9, 10 May 1957, 34955

Author : Moiseyev, P.A.

Inst : not given

Title : The International Discussion on the Conduct of Research on the
Fishing Industry in the Western Part of the Pacific Ocean

Orig Pub: Ryb. kh-vo, 1956, No 10, 44-47

Abstract: The debate of representatives of the USSR, the Chinese PR, the Korean PDR, and the Vietnam DR took place in June, 1956. Questions concerning the conduct of joint scientific research in the Japanese, Yellow, East China, South China Seas and the parts of the Pacific Ocean adjacent to them were discussed. On June 12, "An Agreement Concerning Collaboration in the Fish Industry, Oceanological, and Limnological Research in the Western Part of the Pacific Ocean" was signed. A special Commission was created and four sections were formed within it: marine fishing industry; oceanology; the fresh water fishing industry, and limnology; and the preservation of the

Card : 1/2

-10-

MOISEV, P.A.

New data on the propagation of the white halibut (*Hippoglossus hippoglossus stenolepis* Schmidt). Dokl. AN SSSR 105 no.2:374-375 '55. (MLRA 9:3)

1. Vsesoyuznyy tikhookeanskiy nauchno-issledovatel'skiy institut rybnogo khozyaystva i okeanografii. Predstavleno akademikom Ye. N. Pavlovskim.

(Pacific Ocean--Halibut)

APPROVED FOR RELEASE: 06/23/11, CIA-RDP86-00513R001134900020-6,
W-30604, 7 July 1954, 20 Feb-3 April, 1954

MOISEYEV, P.A.

Characteristics of the life and distribution of benthonic and demersal fish in the waters of the Far East. Vop. ikht. no. 1:24-36 '53. (MIRA 7:6)

1. Tikhookeanskiy nauchno-issledovatel'skiy institut rybnogo khozyaystva i okeanografii. (Soviet Far East--Fishes) (Fishes--Soviet Far East)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900020-6

Fisheries

Development of intensive fishing in the Far East, Ryb.khoz., 10 No. 1, 1952

9. Monthly List of Russian Accessions, Library of Congress, July 1952, Uncl.

MOISEYEV, P. A.

"Bottom-Feeding Commercial Fish of the Far East Seas." Sub 1
Mar 51, Inst of Oceanology, Acad Sci USSR.

Dissertations presented for science and engineering degrees in
Moscow during 1951.

SO: Sup. No. 480, 9 May 55

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900020-6

MOISEYEV, P. A.

"Greater Attention to the Technology of Deep Water Fishing in the Far East"

Ryb. Khoz-vo, No 5, 1949.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900020-6

MOISEV, P. A.

Commercial flounders in the Soviet Far East. Vladivostok, Primorsk, 1946. 60 p. illus.
(52-42108)

SH351.F516

ACC NR: AP6035893

switches which reverse the magnetic recording heads is connected to a contact mechanism on the magnetic recording drum. 3. A modification of this device in which scatter in the amplification factors of the summation amplifiers is compensated by making the resistors at the input to these amplifiers in two sections, one of which is a potentiometer. 4. A modification of this device in which summation quality is improved by using an automatic amplification control system after the frequency filters during playback.

SUB CODE: 0908/ SUBM DATE: 23Apr65

Card 2/2

ACC NR: AP6035893

SOURCE CODE: UR/0413/66/000/020/0130/0130

INVENTOR: Gol'tsman, F.M.; Birman, A. Ye.; Moiseyev, O. N.; Slutskovskiy, A. I.; Bogdanov, V. V.; Yungans, V. Yu.; Kartavtsev, S. M.; Nakhankin, S. A.

ORG: None

TITLE: A device for producing summation tapes based on the method of controlled directional reception of seismic waves. Class 42, No. 187333

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 20, 1966, 130

TOPIC TAGS: seismic wave, seismography, data analysis, electronic equipment

ABSTRACT: This Author's Certificate introduces: 1. A device for producing summation tapes based on the method of controlled directional reception of seismic waves. The installation consists of a magnetic recorder, amplifiers and a multichannel summation unit. The speed of seismogram analysis is increased by basing the multichannel summation unit on delay lines equal in number to the channels to be added. Taps are made from each line corresponding to the various directions of summation, as well as taps from the various delay lines corresponding to one and the same direction of summation. These taps are connected through decouplers and resistors placed at the inputs of the summation amplifiers to filters with their outputs connected to recording galvanometers. 2. A modification of this device in which the winding of the step

Card 1/2

UDC: 550.340.8

L 11188-67
ACC NR: AP6024806

gation, the plane problem of the ascent of an aircraft, and variational problems of the dynamics of ion-drive and other spacecraft. The methods considered in this article have been developed in connection with the problem of the numerical solution of problems of optimal control in the presence of phase constraints. They utilize the variations in the space of phase states, thus making it possible to construct variable trajectories satisfying the phase constraints; these trajectories are represented by arcs connecting points in the space of phase states. This however, raises a new difficulty -- the determination of the type of control assuring the movement of the mapping point along a variable trajectory. These problems do not represent a completed theory. The pertinent numerical algorithms are more or less developed, and so the article devotes the chief attention to them. Various problems of convergence and stability of difference schemes still remain relatively uninvestigated, however. Bellman's function S with respect to the "global" enumeration method is derived in a somewhat novel manner, indicating that there may exist cases where it no longer satisfies the specified constraints. It is concluded that it would be of interest to clarify whether the numerical methods utilizing the variations in a space of states might not be utilized for the solution of problems with "sliding" regimes and special solutions. Could a priori information on the "sliding" pattern of optimal control be utilized to construct more economical enumeration systems? Orig. art. has: 10 figures, 105 formulas.

SUB CODE: 09, 06, 12, 22/ SUBM DATE: 13Dec65/ ORIG REF: 013/ OTH REF: 001

Card 2/2

L 11188-67 EWP(k)/EWP(h)/EWT(d)/EWP(l)/EWP(v) JT
ACC NR: A P6024806

SOURCE CODE: UR/0378/66/000/003/0001/0029

AUTHOR: Moiseyev, N. N.

ORG: none +

TITLE: Numerical methods of the theory of optimal control, based on variations in the space of states

SOURCE: Kibernetika, no. 3, 1966, 1-29

TOPIC TAGS: numeric solution, optimal control, mathematic state, variational calculus

ABSTRACT: The traditional range of applications of the calculus of variations has been greatly expanded in the last 10-15 years, particularly owing to the reduction of the original problem of finding the extremum of a functional to a problem of finding the extremum of the function of a finite (fixed) number of variables. The article is a survey of the relevant studies carried out in the last 3-4 years by a group of scientists from the Computer Center of the USSR Academy of Sciences (N. Ya. Bagayev, I. B. Vapnyarskiy, I. A. Krylov, N. N. Moiseyev, F. L. Chernous'ko). It presents a detailed exposition of numerical methods of the solution of variational problems for the case of additive functionals. The mathematical exposition is illustrated with applied examples such as the problem of selecting optimal routes of navigation.

Card 1/2

UDC: 519.47/83

1 2751-46

ACC NO. 2751-46

21

preparation of this work the author utilized a number of remarks by L. N. Sretenskiy
and P. I. Shchegolev. Orig. art. has: 42 equations and 6 figures.

SEE ALSO: 20/ DATE DATA: 27May65/ ORIG REF: 003/ OTH REF: 004

2751-46

1225-55
 AEC 100 10400340

and up to an approximation $\epsilon^{3/2}$ in f , expressed by the set of equations

$$\begin{aligned} A &= 3(v-1) - \frac{1}{2}\delta(1+\beta) \\ B &= 3v + \frac{1}{2}\delta + 3(v-1)\beta - \frac{1}{2}\delta\beta(1-\beta), \quad D = \frac{1}{2}\delta \\ \frac{1}{2}\delta(1 - \frac{1}{2}\gamma)\eta^2 &= F + D\eta - \frac{1}{2}A\eta^2 - \frac{1}{2}B\eta^3 = P(\eta). \end{aligned}$$

The solution of these equations is studied for the case $\delta > 0$, $\gamma < 1$, $\pi B > 0$ which leads to a surface wave of wavelength

$$\lambda = \sqrt{2} \frac{d\eta}{\sqrt{(D\eta - \frac{1}{2}A\eta^2 - \frac{1}{2}B\eta^3)(1 - \frac{1}{2}\gamma)}}$$

and for the two cases: $\gamma > 2/3$, $\gamma < 1$, and $\gamma > 2/3$, $\gamma > 1$ which have finite amplitudes in the limit $\lambda \rightarrow \infty$. Next, the axisymmetric jet is considered with the boundary conditions

$$\begin{aligned} \psi &= 1 \quad \text{at } r = f(s), \quad \psi = 0 \quad \text{at } r = 0 \\ f''(\psi^2 + \psi_s^2) - 2\gamma K &= C \quad \text{at } r = f(s) \end{aligned}$$

where

$$K = \frac{1}{2} \left(\frac{1}{f \cos \theta} + \frac{f'}{(1+f\eta)^2} \right) = \frac{1}{2} \left[\frac{(1+f\eta)^2}{f} + \frac{f'}{(1+f\eta)^2} \right]$$

$$\left(\gamma = \frac{v}{2\eta\gamma}, \quad \text{or } \gamma = \frac{2\eta^2}{Q} \left(\gamma = \frac{Q}{2\eta} \right) \right).$$

The jet is assumed to be in potential flow with $C > 0$ as well as $C < 0$. The analysis is then extended to the case of the unsteady axisymmetric jet. During the

Page 2/1

REF ID: A600240
SUBJECT: HAWKINS, E. B. (Hawkeye)
SOURCE CODE: BR/0040/69/029/006/1015/1022

74
73
B

ИЗДАНИЕ: Прикладная математика и механика, т. 29, no. 6, 1965, 1015-1022

15

analytically. The stream function ψ is assumed to be harmonic in the domain $0 < y < f(x)$, and the boundary conditions for the plane flow case are given by $\psi = 1$ at $y = f(x)$, $\psi = 0$ at $y = 0$.

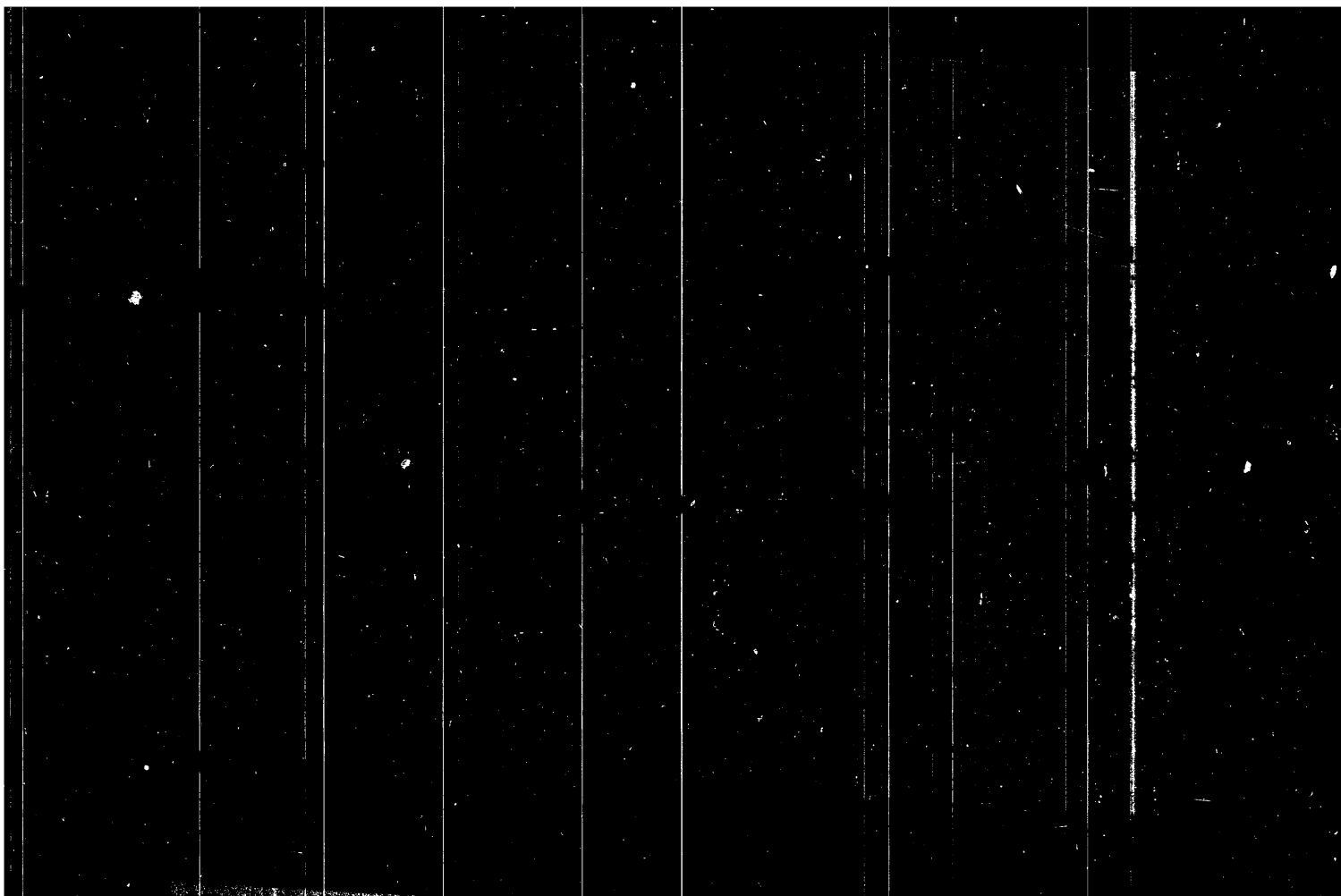
$$\psi^2 + \psi_r^2 + 2\psi - \gamma K = C \quad \text{at } y = f(s)$$

$$v = \frac{f \lambda}{v} = \frac{f}{v} \cdot \lambda \quad K = \frac{f}{2(1 + \mu \cos \theta)}$$

$$r = \frac{h \sin \theta}{m v} = \frac{h}{m v} \cdot \sin \theta \quad (v = \frac{f}{\lambda})$$

The solution for ψ is obtained from a previous work by the same author [1].

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900020-6



APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900020-6

36827-66 EWP(m)/EWT(1) GD
ACC NR. AT6016795 (N) SOURCE CODE: UR/0000/65/000/000/0265/0282
AUTHOR: Krasnoshchekov, P. S.; Moiseyev, N. N.; Shmidt, A. G.; 57
ORG: Computing Center, Academy of Sciences, SSSR, Moscow (Vychislitel'nyy 56
tsentr Akademii nauk SSSR) B+1
TITLE: A class of problems in the dynamics of viscous fluid
SOURCE: International Symposium on Applications of the Theory of Functions in
Continuum Mechanics. Tiflis, 1963. Prilozheniya teorii funktsiy v mekhanike
sploshnoy sredy. t. 2: Mekhanika zhidkosti i gaza, matematicheskiye metody
(Applications of the theory of functions in continuum mechanics. v. 2; Fluid and
gas mechanics, mathematical methods); trudy simpoziuma. Moscow, Izd-vo
Nauka, 1965, 265-282
TOPIC TAGS: viscous fluid, fluid flow, fluid dynamics, boundary value problem,
nonsteady flow, Navier Stokes equation, harmonic function, harmonic oscillation
ABSTRACT: This report is devoted to some problems in the theory of nonsteady
flow of a viscous fluid, originating during the oscillation of various solids which
either contain fluid or are immersed in a fluid, as well as during the oscillations
of fluid volumes having a free surface. The authors primarily investigate linear
problems, i.e., problems on the oscillations of fluids with small amplitude.

Card 1/2

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900020-6

Dinamika tela s polostiami, soderzhashchimi zhidkost'.
Moskva, Nauka, 1965. 439 p. (MIRA 19:1)

ACCESSION NR: AP4037253

A(x_0, y_0, z_0) to point B(x_T, y_T, z_T) subject to the gravitational forces of the earth and the moon. Optimal control problems which cannot be solved by the method of dynamic programming presented in the article, but require the application of the maximum principle of Pontryagin, are also indicated. Orig. art. has: 6 figures and 12 formulas.

ASSOCIATION: none

SUBMITTED: 17Dec63 DATE ACQ: 09Jun64

ENCL: 00

SUB CODE: DP NO REF SOV: 007

OTHER: 002

Card 3/3

ACCESSION NR: AP4037253

$$I(u) = \int_0^T F(t, Lu) dt$$

(L is a certain operator), is defined. A set of points (U_{ij}) , called the scale of controls, is constructed and the operation Λ , establishing the correspondence between points $u_i, j, u_{i+1, k}$ and the corresponding function $u_{ij}^k(t)$, is defined. The algorithm of dynamic programming for determining $u(t)$ in the form of a polygonal curve is presented in detail. It is shown how the obtained solution $u(t)$ can be refined. The boundary-value problem for the Lagrange equation is taken and the author demonstrates how this problem can be reduced to an equivalent problem of the variational calculus, to which the method presented in this article can be applied, by applying the Hamilton-Ostrogradskiy principle. Peculiarities of the iterative process for solving this problem are analyzed. It is indicated that the calculation scheme presented can be used in the solution of many problems of mechanics, e.g., the problem of determining the initial impulse needed to move a space ship from point

Card 2/3

ACCESSION NR: AP4037253

S/0208/64/004/003/0485/0494

AUTHOR: Moiseyev, N. N. (Moscow)

TITLE: Methods of dynamic programming in the theory of optimal control

SOURCE: Zhurnal vysshelitel'noy matematiki i matematicheskoy fiziki, v. 4, no. 3, 1964, 485-494

TOPIC TAGS: dynamic programming, optimal control, control function, Lagrange equation, boundary value problem, Hamilton Ostrogradskiy principle, Pontryagin maximum principle

ABSTRACT: The article discusses the solution of a certain class of variational problems of the theory of optimal control without reducing them to certain boundary-value problems. The method of dynamic programming presented has no connection with Bellman's procedure. The problem of determining from the set of allowable control functions UEC the control function $u(t)$, which minimizes the functional

Card 1/3

ACCESSION NR: APL021561

ENCLOSURE: 01

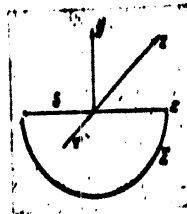


Fig. 1.

Card 4/4

Card 2/4

ACCESSION NR: AP4024564

where F is the Froude number. The question concerning the damping of the standing waves on the surface of the liquid is studied, assuming that the viscosity of the liquid is small. The oscillation of the liquid between two vertical walls is then considered. Tables are given showing the dependence of the damping on the viscosity for water and kerosene. Finally, a problem concerning a forced oscillation of the viscous liquid by a perturbation force with a given frequency is investigated. "The author thanks A. G. Schmidt, who read the manuscript and checked the computations." Orig. art. has: 76 equations, 1 figure, and 2 tables.

ASSOCIATION: none

SUBMITTED: 20May63

DATE ACQ: 16Apr64

ENCL: 01

SUB CODE: PH

NO REF SOV: 005

OTHER: 000

Card 3/4

ACCESSION NR: AP4024564

S/0208/64/004/002/0317/0326

AUTHORS: Bagayeva, N. Ya. (Moscow); Moiseyev, N. N. (Moscow)

TITLE: Three problems on the oscillation of a viscous liquid

SOURCE: Zhurnal vyvchislitel'noy matematiki i matematicheskoy fiziki, v. 4, no. 2, 1964, 317-326

TOPIC TAGS: viscous liquid, incompressible liquid, plane oscillation, liquid oscillation, damping, perturbed liquid

ABSTRACT: A series of problems concerning the oscillation of a viscous liquid are considered. These problems permit the application of the method presented by N. N. Moiseyev (O krayevykh zadachakh dlya linearizovannykh uravneniy Nav'yera-Stoksa v sluchaye, kogda vyazkost' mala. Zh. vyvchisl. matem. i matem. fiz., 1961, 1, No. 3, 548-550). At the same time, several new facts in the dynamics of viscous liquids are established. Plane oscillations of a viscous, incompressible liquid in a vessel, arising from the force of gravity, are considered. The wave amplitude and the velocity are considered small, and, correspondingly, the problem is linearized. The coordinate system and notation are given in Fig. 1 of the

Card 1/4

L 47187-66

ACC NR: AR6021908

they are contained. The authors limit themselves to the discussion of problems of types of fluid equilibrium, viscosity, and dynamic interaction. [Translation of abstract] [SP]

SUB CODE: 22/

Card 2/2 *ecfr*

L 47187-66 FSS-2/EWT(1)/EWP(m)/EEC(k)-2 TT/WW/GW

ACC NR:

AR6021906

SOURCE CODE: UR/0313/66/000/003/0027/0027

AUTHOR: Moiseyev, N. N.; Myshkis, A. D.; Petrov, A. A.

TITLE: Hydrodynamic problems in astronautics

SOURCE: Ref. zh. Issl kosm prostr, Abs. 3.62.230

REF SOURCE: 15 Internat. Astronaut. Congr., Warsaw, Sept. 1964

TOPIC TAGS: hydrodynamics, fluid equilibrium, cosmic hydrodynamics, space hydrodynamics, space fluid mechanics

ABSTRACT: The authors discuss a series of new problems in hydrodynamics prompted by the tremendous expansion of cosmic studies. These problems are related to the study of the behavior of fluids in a state of weightlessness or under the effect of weak gravitational or inertial fields, and to the study of the dynamic effects of fluids, under the above mentioned conditions, on the vessels in which

Cord 1/2

MOISEYEV, N. N.; MYSHKIS, A. D.; PETROV, A. D.

"Some problems of hydrodynamics arising in the theory of space vehicle movement."

report submitted for 15th Intl Astronautical Cong, Warsaw, 7-12 Sep 64.

Computing Center, AS USSR

VOLOSOV, V.M.; MOISEYEV, N.N.; MORGUNOV, B.I.; CHERNOUS'KO, F.L. (Moscow)

"Asymptotic methods of non-linear mechanics associated with the process of averaging"

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 January - 5 February 1964

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900020-6

MOISEYEV, N.N. (Moscow); MYSHKIS, A.D. (Khar'kov); PETROV, A.A. (Moscow)

"On some new problems of the theory of motion of a body with liquid inside".

report presented at the 2nd All-Union Congress on Theoretical and Applied Mechanics, Moscow, 29 Jan - 5 Feb 64.

NOISNIY, N.N. (Moscow)

"On numerical methods in optimal control problems - some results and problems"

report presented at the 2nd All-Union Congress on Theoretical and Applied
Mechanics, Moscow, 29 Jan - 5 Feb 64.

BAGAYEVA, N.Ya.; MOISEYEV, N.N.

Method for the numerical solution of optimum control problems. Dokl. AN SSSR 153 no.4:747-750 D '63. (MIRA 17:1)

1. Vychislitel'nyy tsentr AN SSSR. Predstavleno akademikom A.A. Dorodnitsynym.

Asymptotic description of fast ...

S/208/63/003/001/008/013
B112/B102

An asymptotic general solution, of (1.2) is used to reduce (1.1) to the standard form

$$\begin{aligned} x' &= \mu X(x, y, t, \mu), \\ y' &= Y_0(x, t) + \mu Y_1(x, y, t, \mu). \end{aligned} \quad (1.3)$$

In such a way it is shown that the whole phase plane may be investigated effectively with the exception of a strip bordering on a separatrix.

SUBMITTED: August 1, 1962

S/208/63/003/001/008/013
B112/B102

AUTHOR: Moiseyev, N. N. (Moscow)

TITLE: Asymptotic description of fast rotations

PERIODICAL: Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki,
v. 3, no. 1, 1963, 145-158

TEXT: The equation of oscillation

$$y'' + f(y, \tau) = \mu F(y, y', t) \quad (1.1)$$

($\tau = \mu t$) is assumed to contain such a function f that the degenerate equation

$$y'' + f(y, \tau) = 0 \quad (1.2)$$

has a periodic phase plane with the period 2π . From this it follows that

$$\bar{f}(\tau) = (1/2\pi) \int_y^{y+2\pi} f(x, \tau) dx = 0.$$

Card 1/2

L 18732-63

ACCESSION NR: AP3006119

Is directed to the basic problems of the theory of waves, such as those of flows with Froude numbers less than unity in the case of flow past an obstacle, of the theory of waves "in the large," of the theory of three-dimensional flows, and of the complex theory of unsteady waves, for example, periodic (standing) and Cauchy-Poisson waves, for which there is still no rigorous method. Orig. art. has: 12 figures and 13 formulas.

ASSOCIATION: none

SUBMITTED: 10Apr63

DATE ACQ: 11Sep63

ENCL: 00

SUB CODE: AI

NO REF SOV: 026

OTHER: 003

Card 2/2

L 18732-63

Pu-4

EPA(b)/EWT(1)/EPF(n)-2/BDS/T-2 AFPTC/ASD/SSD Pd-4/

ACCESSION NR: AP3006119

8/0207/63/000/004/0003/0016

AUTHOR: Krasovskiy, Yu. P.; Lavrent'yev, M. A.; Moiseyev, N. N.; Ter-Krikorov, A. M.; Shabat, A. E. (Novosibirsk, Moscow)

TITLE: Mathematical problems of the hydrodynamics of a liquid with free boundaries

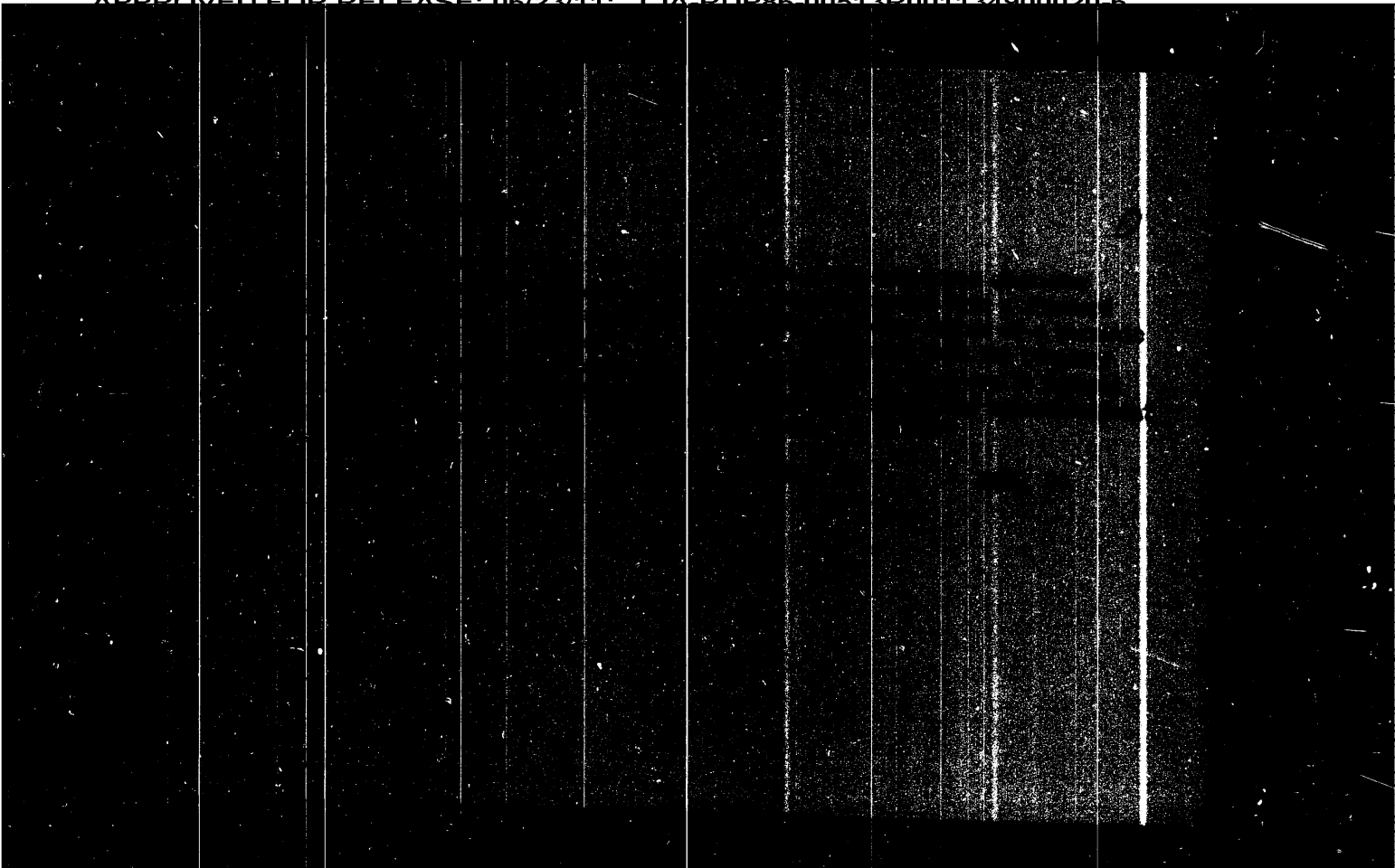
SOURCE: Zhurnal prikladnoy mekhaniki i tekhnicheskoy fiziki, no. 4, 1963, 3-16

TOPIC TAGS: liquid-motion theory, free boundary, free-stream flow, discontinuous flow, wave phenomenon, standing wave, three-dimensional flow, Froude number, gravitational wave, Cauchy-Poisson wave

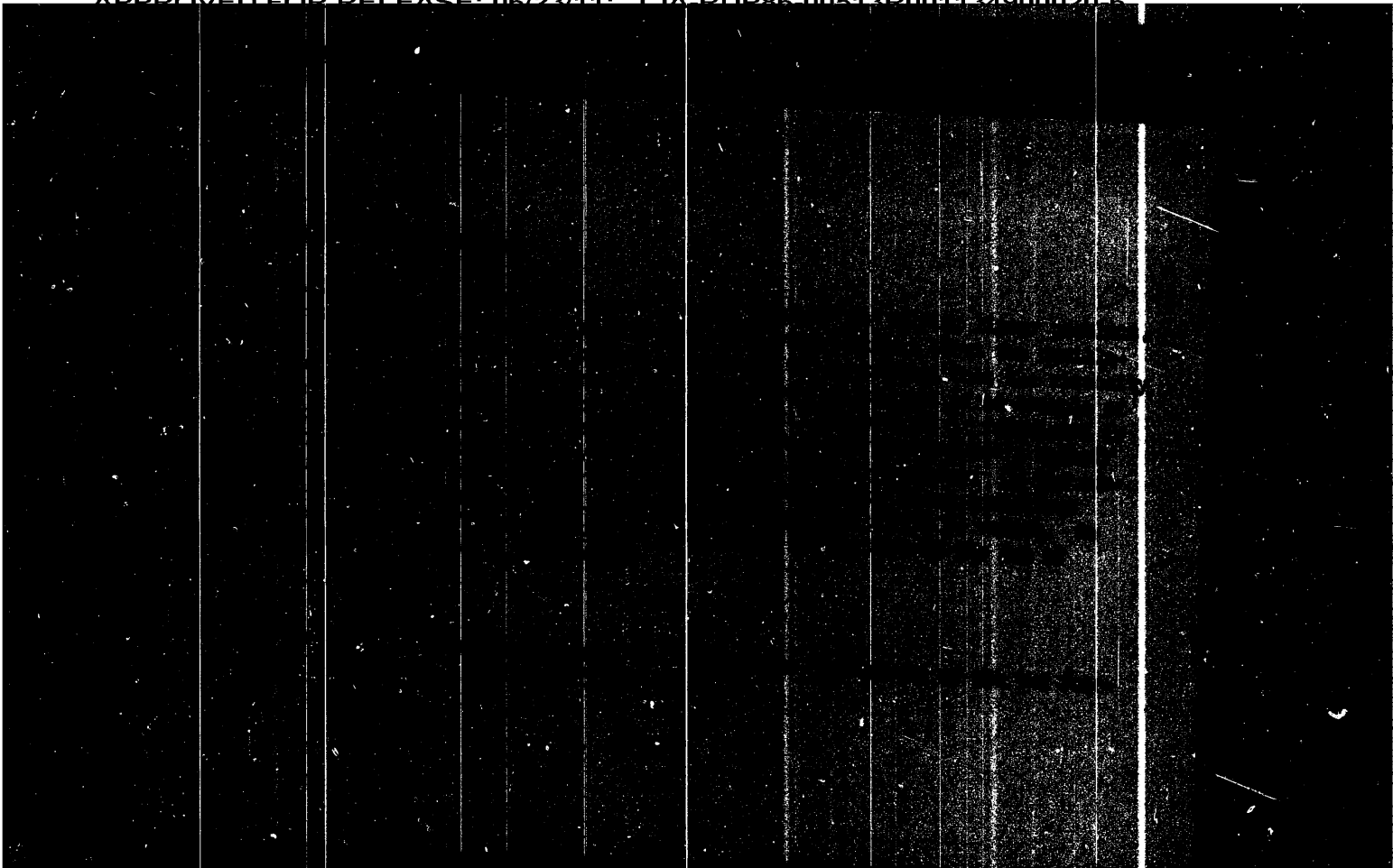
ABSTRACT: The article reviews Soviet publications of the last four years dealing with investigations in the theory of the motion of a liquid with free boundaries. Data available from the authors' survey reports presented at the IV Vsesoyuznyy matematicheskiy s'yezd (4th All-Union Mathematical Congress) in Moscow in 1958 are used in this paper. New models of free-stream and discontinuous flows are presented and discussed. Approximate methods for investigating wave phenomena, based on the asymptotics of solutions, are reviewed, and exact solutions of problems related to the theory of gravitational waves are analyzed. Attention

Card 1/2

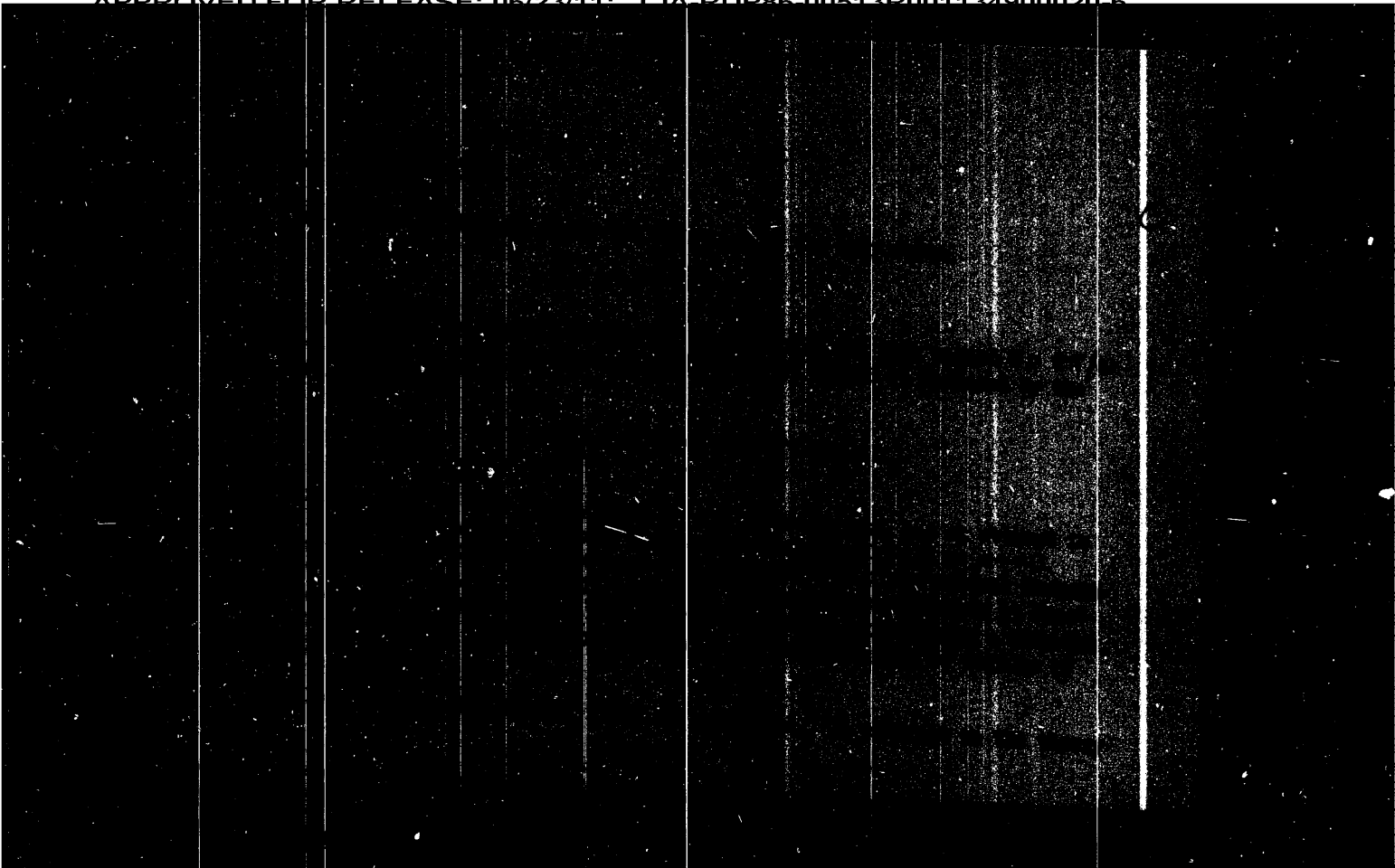
APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900020-6



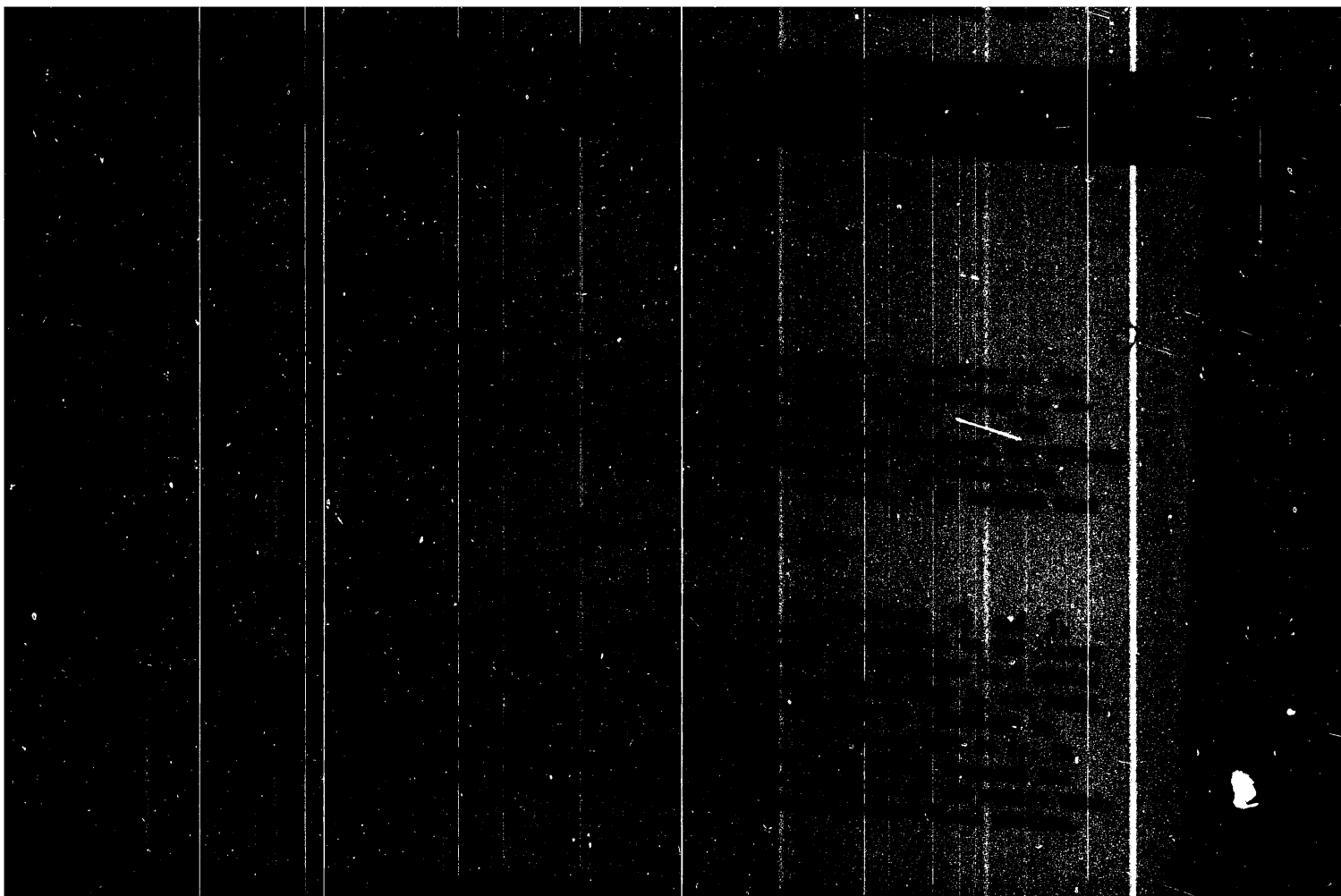
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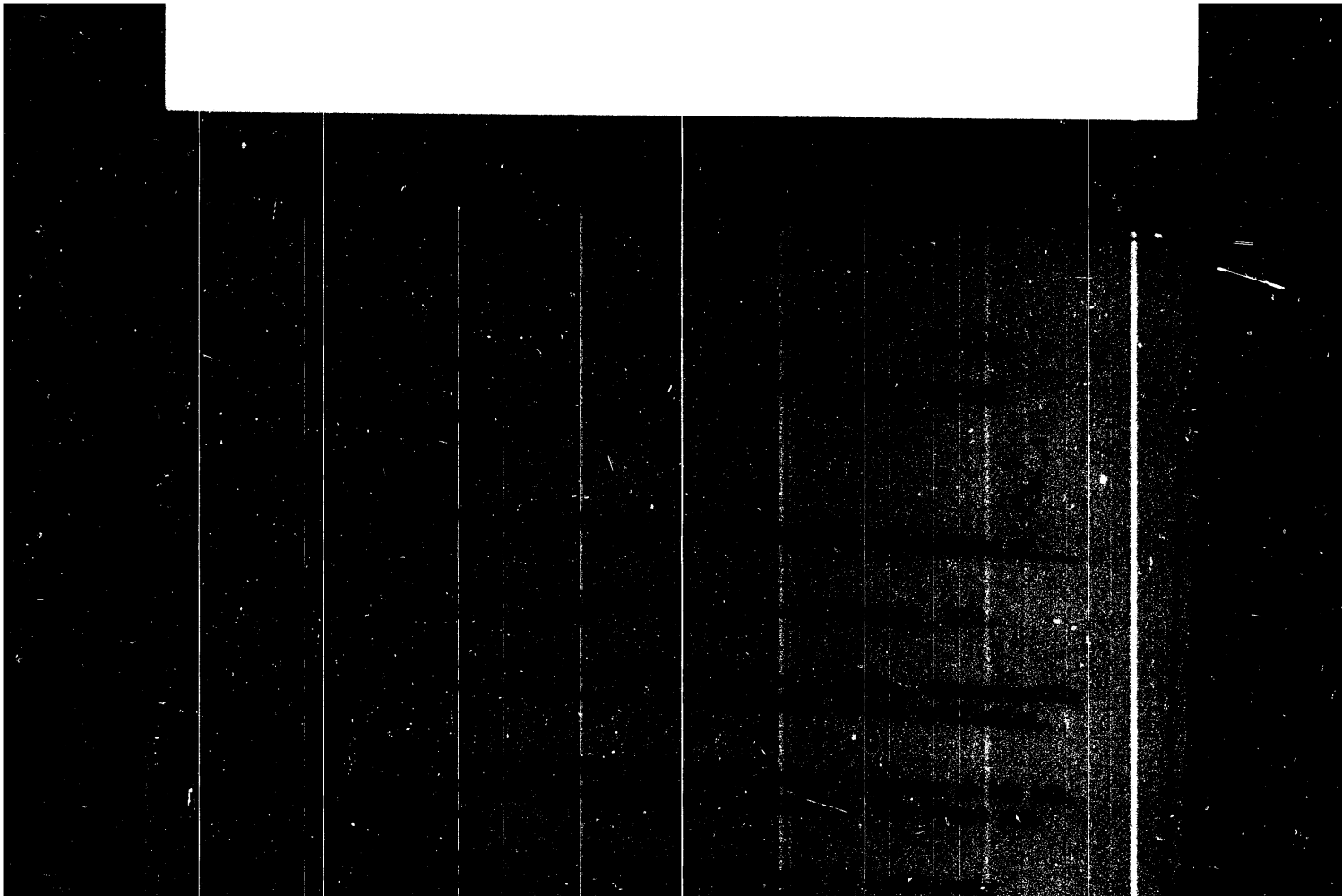


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APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900020-6

MOISEYEV, N. N., BAGAYEVA, N. Y.,

"New method for solution of problems of optimal flight theory"

report to be submitted for the 14th Congress Intl. Astronautics Federation,
Paris, France, 25 Sep-1 Oct 1963

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900020-6

~~CONFIDENTIAL~~ NOISEYEV, N. N.

"Methods of Non-Linear Mechanics in the Problems of the Dynamics of Satellites."

Report presented at the 13th Intl. Astronautics Congress, Varna, Bulgaria, 23-29 Sep. 62.

Transactions of the All-Union Congress (Cont.)

SOV/6201

5

Golitsyn, G. S., A. G. Kulikovskiy, and K. P. Stanyukovich.
Magnetohydrodynamics

94

Gurevich, M. I. Theory of an Ideal-Fluid Jet

114

Ivanilov, Yu. P., N. N. Moiseyev, and A. M. Ter-Krikorov.
Asymptotic Methods for Problems of Motion of a Fluid With
Free Boundaries

135

Loytsyanskiy, L. G. Semiempirical Theories of the Interaction
of the Processes of Molecular and Molar Exchange in the
Turbulent Motion of a Fluid

145

Petrov, G. I. Boundary Layer and Heat Exchange at High Speeds

167

Sedov, L. I. On the Theory of Constructing Mechanical Models of
Continuous Media

176

Card 4/6

Transactions of the All-Union Congress (Cont.)

SOV/6201

(25)

PURPOSE: This book is intended for scientific and engineering personnel who are interested in recent work in theoretical and applied mechanics.

COVERAGE: The articles included in these transactions are arranged by general subject matter under the following heads: general and applied mechanics (5 papers), fluid mechanics (10 papers), and the mechanics of rigid bodies (8 papers). Besides the organizational personnel of the congress, no personalities are mentioned. Six of the papers in the present collection have no references; the remaining 17 contain approximately 1400 references in Russian, Ukrainian, English, German, Czechoslovak, Rumanian, French, Italian, and Dutch.

TABLE OF CONTENTS:

SECTION I. GENERAL AND APPLIED MECHANICS

- Artobolevskiy, I. I. Basic Problems of Modern Machine Dynamics 5
- Bogolyubov, N. N., and Yu. A. Mitropol'skiy. Analytic Methods of the Theory of Nonlinear Oscillations 25

Card 2/6

Moiseyev, N.N.

PHASE I BOOK EXPLOITATION SOV/6201 (29)

Vsesoyuznyy s"yezd po teoreticheskoy i prikladnoy mekhanike. 1st, Moscow, 1960.

Trudy Vsesoyuznogo s"yezda po teoreticheskoy i prikladnoy mekhanike,
27 yanvarya -- 3 fevralya 1960 g. Obzornyye doklady (Transactions of the
All-Union Congress on Theoretical and Applied Mechanics, 27 January to
3 February 1960. Summary Reports). Moscow, Izd-vo AN SSSR, 1962.
467 p. 3000 copies printed.

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Editorial Board: L. I. Sedov, Chairman; V. V. Sokolovskiy, Deputy Chairman;
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Card 1/6

Anatoliy Alekseyevich Dorodnitsyn ... S/042/61/016/002/005/005
C 111/ C 222

Switzerland in 1960. His papers contain essential contributions in the domains: dynamic meteorology, gas dynamics and applied mathematics.

The authors mention N. Ye. Zhukovskiy and S. A. Chaplygin. There is a list containing the publications of A. A. Dorodnitsyn (1936-1960) with 23 titles and a photo of him.

Card 3/3

Anatoliy Alekseyevich Borodnitsyn

3/047/6:0:6/002/00:00
0000000000

USSR. Since 1955 he is the director of the Vychislitel'nyy tsentr Akademii nauk SSSR (Computing Center of the Academy of Sciences USSR).
Educational activity: 1940-1941 - Assistant at the Chair of Higher Mathematics in the Leningrad Mining Institute; 1944-1946 - Professor at the Chair of Theoretical Aerodynamics of the Moskovskiy aviatsionnyy institut imeni S. Ordzhonikidze (Moscow Aviation Institute imeni S. Ordzhonikidze). Since 1947 - Professor and leader of the Chair of Gas Dynamics of the Moskovskiy fiziko-tekhnicheskii institut (Moscow Physical-Technical Institute). Furthermore - President of the Komissiya po vychislitel'noy tekhnike AN SSSR (Committee of Computing Technics of the Academy of Sciences USSR); member of the Komitet po Leninским premiyam (committee for Lenin Prizes); president of the ekspertnaya komissiya VAK po avtomatizatsii i priborostroyeniya (Committee of Specialists of the VAK for Automation and Construction of Equipment). Chief editor of the "Zhurnal vychislitel'noy matematiki i matematicheskoy fiziki" (Journal of Computing mathematics and mathematical physics). A. A. Borodnitsyn participated in the following congresses: Sweden in 1957; USA in 1958; France in 1959; Poland in 1959; Spain in 1958.

Card 2/3

S/DA276170.670027007000
C 222

AUTHORS: Belotserkovskiy G. M., Kibel' J. A., Moiseyev N. N.,
Khrushchinskaya E. A., Gerasimov P. J. and Shavalev-
skiy Yu. B.

TITLE: Anatoliy Alekseyevich Dorodnitsyn (on the occasion of
his 50th birthday)

PERIODICAL: Uspekhi matematicheskikh nauk, v. 16, no. 2, 1961,
189-196

TEXT: A. A. Dorodnitsyn was born on December 2, 1910 in the district
Tula. In 1931 he finished the study at the Mining Faculty of the
Petroleum Institute Gruznyy. Since 1935 he worked in the Glavnaya
geofizicheskaya observatoriya (Geophysical Main Observatory) in
Leningrad under the leading of J. A. Kibel' (school of N. Ye. Kochin).
In 1939 -- candidate of physical-mathematical sciences. Since 1941 he
was in the Tsentral'nyy aerogidrodinamicheskiy institut imeni N. Ye.
Zhukovskogo (Central Aerohydrodynamic Institute imeni N. Ye.
Zhukovskiy). In 1942 -- Doctor dissertation "Boundary layer in a com-
pressible gas". In 1955 -- member of the Academy of Sciences of the
USSR.

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900020-6

(Boundary value problems) (Differential equations, Linear) (MIRA 14:8)
(Hydrodynamics)

AUTHORS: Moiseyev, N.N. and Sveshnikov, A.G.

TITLE: Symposium on wave diffraction. Odessa September 26 - October 1, 1960

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 8, 1961, 68, abstract 8 I468 (Zh. vychisl. matem. i matem. fiz., 1961, 1, no. 1, 181-182)

TEXT: The symposium on the theory of diffraction has been organized by the Commission on Acoustics of the AS USSR, in conjunction with the Institute of Acoustics of the AS USSR and the Odessa Electrotechnical Institute of Communications. Investigations into the following were discussed: Theory of diffraction in radio engineering, acoustics, theory of elasticity and hydrodynamics. 7 papers were read at the general session and 80 at committee sessions. There was a wide interchange of ideas on the methods used in the diffraction theory. [Abstracter's note: Complete translation]

Card 1/1

asymptotic methods of the narrow-strip type.

S/763/61/000/000/010/13

In the construction of the asymptotic solutions it is assumed a priori that the free boundary has a small curvature. Thereupon an auxiliary problem can be examined, assuming the free boundary to be known, so that the condition of the absence of normal stresses becomes redundant. The solution of this auxiliary problem serves to determine the functions sought and their derivatives in terms of the boundary and its derivatives. The condition of the absence of any stresses is then used to derive a certain equation for the free boundary. If the problem is stationary and plane (or axially-symmetrical), then the equation thus constructed is an ordinary nonlinear differential equation. In other instances we obtain a certain differential equation in terms of partial derivatives with a number of derivatives not less by unity than that in the initial equations. The methods set forth in the paper are useful in the analysis of certain flows of a viscous fluid; they are also applied to the theory of the motion of a compressible fluid in subsonic flow. The theory appears to have possibilities in problems of the stability of thin liquid layers (films) and in the theory of magnetohydrodynamic and viscous laminar flows. The concepts set forth in the paper should serve in the construction of effective numerical methods. Simultaneously the theory of narrow strips encounters some problems on which further investigations are required. There are 11 figures.

1. Zhukovskiy, G. I. Russian-language Soviet and 1 English-language: Mayer, F. G., *Trudy AN SSSR*, Moscow, Press, v. 85, no. 8, 1953.

Page 2/2

asymptotic methods of the narrow-strip type.

8/763/61/000/000/010/013

... gravity waves. A survey is given of studies performed at the ... USSR, and at the Moscow Physico-Technical Institute, under-
... problems proposed by M. A. Lavrent'yev and for the investigation
... problems of hydrodynamics which lend themselves for formulation accord-
... theory. At the outset a number of general problems of the theory of
... elliptical operators was examined within a narrow region. A
... "narrow" if the shape of its boundary and its boundary conditions
... such that the gradients of the solution obtained are significantly greater in one
... direction than the gradients in another direction. For example, in the theory of
... waves, the condition of "narrowness" is fulfilled in that instance when the wave
... length is much greater in comparison to the depth of the liquid. The assumption
... permits the construction of an asymptote for solutions of the above-
... problems and permits also the establishment of a formal pro-
... for the construction of asymptotic solutions of any degree of accuracy. Inas-
... as the asymptotic methods are not linked to specific conformal representations,
... narrow strips can be generalized to a broad class of equations, and
... problems of the dynamics of a liquid with free boundaries can be
... set forth here has much in common with the theory of the
... though it does not lead to a parabolic degenerate operator. It
... to satisfy all conditions in the boundary strip. In the

and 2/3

8/763/61/000/000/010/013

1. **THEORY OF NARROW STRIPS**

1.1. **Generalized methods of the narrow-strip type.**

1.1.1. **Generalized problems of mathematical mechanics.** Novosibirsk, Izd-vo Sibirsk. nauch. ts. 1961. 180-200.

1.1.2. **Generalized variational problems of conformal mapping, developed by A. A. Gakhov.** The problems of the mapping of narrow strips have been the subject of special attention. These problems of the theory of functions are closely related to a whole class of problems of hydrodynamics, namely, the theory of the motion of a liquid with free boundaries, that is, problems of hydrodynamics in which the boundary surface that bounds the fluid volume is not fixed in advance but consists of moving elements. Such portions of a surface are termed "free boundaries." The shape of a free boundary must be determined in the course of the solution of a problem. A typical example of such problems is the problem of surface waves and the theory of jets. Such problems cannot be reduced to the standard boundary problem, since the determination of the as yet unknown (free) boundary requires certain additional relationships between the velocity of a liquid particle and the shape of the boundary. The determination of the shape of the free boundary surface

MOISEYEV, N. N.

"On mathematical methods for investigation of fluid nonlinear oscillations."

Paper presented at the Intl. Symposium on Nonlinear Vibrations, Kiev, USSR, 9-19 Sep 61

Computing Center of the USSR Academy of Sciences, Moscow

82496
S/040/60/024/04/11/023
C 111/ C 333

Existence and Non-Uniqueness Theorem for Vortex Waves of Periodical Type

$$\int_0^1 F(\psi) d\psi, \quad (z \geq d > 0), \text{ exists,}$$

then, for fixed λ and sufficiently small $\varepsilon > 0$, (3)-(5) possess a one-parameter family of solutions if $\psi_n - \psi < \varepsilon$, where ψ_n are the eigenvalues of the linearized problem and

$$\psi = \frac{gh^3}{Q}, \quad h = \frac{Q}{c},$$

Q denotes the consumption and c the velocity.

There are 5 references: 1 Soviet, 3 French and 1 German.

SUBMITTED: April 13, 1960

Card 3/3

82496

S/040/60/024/04/11/023

C 111/ C 333

Existence and Non-Uniqueness Theorem for Vortex Waves of Periodical Type

$$(5) \quad \tau_x^* = -\nu e^{-2\tau^*} \frac{\operatorname{tg} \theta^*}{z^2 (-1)}$$

where * denotes the boundary values and Φ_1, Φ_2 are nonlinear operators:

$$\begin{aligned} \Phi_1(\theta, \tau) &= -z \theta \psi (e^\tau - 1) - \tau_x (\cos \theta - 1) + \theta_x \sin \theta \\ \Phi_2(\theta, \tau) &= \frac{F(\psi)}{z(\psi)} (e^{-\tau} - e^\tau) - z \tau_x \psi (e^\tau - 1) + \theta_x (\cos \theta - 1) \\ &\quad + \tau_x \sin \theta \end{aligned}$$

Periodical solutions in x are sought, where the condition of symmetry

$$(6) \quad \theta(-\frac{\lambda}{2}) = \theta(\frac{\lambda}{2}) = 0$$

is additionally set up, where λ is the prescribed period. The author proves the theorem: If the integral

Card 2/3

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S/040/60/024/04/11/023
C 111/ C 333

AUTHOR: Moiseyev, N. N. (Moscow)

TITLE: Existence and Non-Uniqueness Theorem for Vertex Waves of Periodical Type

PERIODICAL: Prikladnaya matematika i mekhanika, 1960, Vol. 24, No. 4, pp. 711-714 (USSR)

TEXT: The determination of stationary gravitational waves on the surface of a liquid was reduced by Gougon (Ref. 1,3) to a certain boundary value problem. The author introduces the new variables θ (angle of gradient of the velocity vector) and

$$\tau = \frac{1}{2} \ln \frac{u^2 + v^2}{z^2}$$

and obtains the equivalent problem

$$(3) \quad z \theta_{\psi} + \tau_x = \phi_1(\theta, \tau), \quad z \tau_{\psi} - \theta_x = \phi_2(\theta, \tau)$$

$$(4) \quad \theta = 0 \quad \text{for} \quad \psi = 0$$

Card 1/3

7/02/80/015/04/07/007
C111/C222

M.D. Rozenberg, D.A. Efros, I.N. Vekua, N.I. Muskhelishvili, A.L. Gol'den-
veyzer, Yu.N. Rabotnov, A.A. Ilyushin, Kh.A. Rakhmatulin, V.A. Florin, G.I.
Barenblat, D.I. Sherman, S.G. Mikhlin, V.D. Kapradze, L.M. Kachanov, V.G.
Berezantsev, P.A. Rebinder, S.K. Persidskiy, S.N. Shimanov, G.V. Kamenkov,
G.K. Pozharitskiy, Ye.P. Popov, Ya.N. Roytenberg, A.Ya. Proskuryakov, V.O.
Kononenko, V.A. Yakubovich, Ya. Kurtsveyl, O.A. Ladyzhenskaya, V.I. Yudovich,
Gol'dshtik, L.A. Dikiy, O.A. Oleynik, A.A. Grib, O.S. Ryzhov, S.A.
Khristianovich, L.V. Ovsyannikov, Yu.P. Pavlovskiy, M.G. Kreyn, V.G. Sizov,
V.I. Merkulov, B.N. Zublik, Yu.P. Krasovskiy, S.V. Fal'kovich, F.I. Frankl',
S.K. Aslanov, B.M. Bulakh, N.N. Yanenko, V.A. Suchkov, Yu.Ya. Pogodin,
A.G. Sidorov, M.A. Lavrent'yev, K.P. Stanyukovich, M.D. Khaskind, V.S.
Khomenko, Yu.P. Rayser, K.I. Babenko, P.I. Chushkin, V.V. Shchennikov, G.G.
Chernyy, Koryavov, A.A. Movchan, I.I. Vorovich, V.V. Bolotin, A.L.
Gol'denveyzer, N.A. Alomya, S.A. Tumarkin, and G.S. Shapiro.

✓

Card 2/2

On the wave theory in

C111/C444

where C is the energy constant, θ is the consumption, and h is the depth of the liquid in the wave trough. The author relies on asymptotic methods which generalise the well-known method of M. A. Laurent yev to an approximative conformal mapping of narrow strips, and under certain suppositions about the smoothness of the surface of the investigated wave, he reduces the formulated problem for two special functions $F(\psi)$ to the solution of an ordinary differential equation of second order. A qualitative, and adjoining an analytic investigation of the solutions of this equation is accomplished. In the result of these investigations the author proves the following two statements:

- 1.) In the stream of a stirred up liquid there exists a critical value of the velocity which is always smaller than the critical velocity of a potential stream.
- 2.) On the surface of a stirred up liquid there can exist solitary waves.

[Abstracter's note: Complete translation.]

Card 2/2

S/044/61/000/011/008/049
C111/C444

AUTHOR: Moiseyev, N. N.

TITLE: On the wave theory in a stirred up liquid

PERIODICAL: Referativnyy zhurnal, Matematika, no. 11, 1961, 19,
abstract 11B88 (Zh. prikl. mekhan. i tekhn. fiz., 1960,
no. 3, 81 - 89)

TEXT: The stream domain T be a curvilinear strip which is bounded by the wave profile $y = f(x)$ of the stirred up liquid and by the ground $y = 0$ of T (= x -axis). The stream function Ψ is to satisfy the condition $\Delta\Psi = -\Omega, \Omega$ indicating the whirl. The stream in T is assumed to be stationary. The author formulates the problem of stationary waves on the surface of the stirred up liquid under a given function $\Omega = \Omega(\Psi)$ as follows: Determine a function $\Psi(x, y)$, satisfying the equation

$$\Delta\Psi(x, y) = F(\Psi)$$

in T , and the function $y = f(x)$ under the following boundary conditions:

$$\Psi = 0 \text{ for } y = 0, \quad \Psi = 1 \text{ for } y = f(x),$$

$$\text{Card } 1/2 \quad \Psi_x^2 + \Psi_y^2 + 2vf = C \text{ for } y = f(x) \quad (v = \frac{gh^2}{g}),$$

MOISEYEV, N. N.

"Asymptotic Methods in the Problems of Fluid Flow with Free Boundary."

report to be submitted for the Intl. Council of the Aeronautical Sciences,
Second International Congress, Zurich, Switzerland, 12-16 Sep 60.

MOISEYEV, N. N. - USSR Academy of Science, Leningrad Road 7. Moscow D-40-USSR.

"The ~~asymptotic~~ Methods in the Problems of Fluid Flow with Free Boundary."

report submitted for the 10th Intl. Congress of Applied Mechanics, Stresa, Italy,
31 Aug-7 Sep 1960.

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MOISEV, N. N., TER-KRIKOROV, A. M., IVANILOV, Yu. P. (Moscow)

"Asymptotic Methods In Motion Analysis of Liquids With Free Surfaces."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

MOISEYEV

MOISEEV, N. N. (Moscow)

"Direct Methods in the Study of an oscillating Liquid and of Vessels
Containing Liquid."

report presented at the First All-Union Congress on Theoretical and Applied
Mechanics, Moscow, 27 Jan - 3 Feb 1960.

MOISEYEV, N. N. (Moscow)

"Nonlinear waves."

report presented at the First All-Union Congress on Theoretical and Applied Mechanics, Moscow, 27 Jan - 3 Feb 1960.

On the Theory of Elastic Oscillations of a Body
Containing a Liquid

SOV/20-127-1-13/65

$\omega_n \rightarrow \infty$ holds. As a special case, this theorem contains

an analogue to the system of Lagrange concerning the minimum of potential energy. Because of the validity of this theorem, the eigenfunctions and eigenfrequencies may also be calculated by means of the Ritz method. There are 1 figure and 1 Soviet reference.

ASSOCIATION: Vychislitel'nyy tsentr Akademii nauk SSSR
(Computation Center of the Academy of Sciences, USSR)

PRESENTED: March 25, 1959, by A. A. Dorodnitsyn, Academician

SUBMITTED: March 16, 1959

Card 3/3

On the Theory of Elastic Oscillations of a Body
Containing a Liquid

SOV/20-127-1-13/65

bar are conservative and depend linearly on the flexure $\chi(y,t)$ and on the torsional angle $\theta(y,t)$. The equations of motion of such a system are deduced in the most simple manner from the Hamiltonian principle

$$\delta \int_0^t (T - U) dt = 0.$$

For the kinetic and potential energy T and U respectively, explicit expressions are written down. By the application of certain operators, a rather voluminous system of integro-differential equations is then obtained. An equivalence principle introduced by M. Ye. Zhukovskiy does not apply in the case under investigation, and there is no "equivalent bar". The hypothesis of plane cross sections, by the way, is not suited for describing the motion of a liquid. After several calculation steps, which the author discusses, the following theorem is obtained: If the potential energy U of the system bar + liquid is a positively definite functional, a complete system of eigenfunctions exists in a certain direct sum of spaces, where

Card 2/3

SOV/20-127-1-13/65

16(1)

AUTHOR:

Moiseyev, N. N.

TITLE:

On the Theory of Elastic Oscillations of a Body Containing a Liquid
(K teorii uprugikh kolebaniy tela s zhidkost'yu)

PERIODICAL:

Doklady Akademii nauk SSSR, 1965, Vol 127, Nr 1, pp 51-54 (USSR)

ABSTRACT:

The author investigates the most simple variant of the problem mentioned in the title, in which the elastic body may be characterized as a bar with rectilinear rigidity axis. For such a bar the hypothesis of plane cross sections holds. It is assumed that with the rigidity axis the system of coordinates $Oxyz$ is connected, and that the system $O_1x_1y_1z_1$ is connected with the free surface of the heavy, perfect, and incompressible liquid. The moistened surface of the semi-space is denoted by Σ ; the free surface in the state of rest by S , and the range bounded by the surface $\Sigma + S$ by τ . The author investigates the infinitely small torsional and flexural vibrations of the bar in the yOz -plane. The motion of the liquid, which is caused by these vibrations, is assumed to be a potential motion, and the velocities and amplitudes of the waves are assumed to be infinitely small. The liquid is assumed to vibrate in the field of gravity. The forces acting upon the

88902

S/124/61/11/101/101/104
A005/A001

An Investigation of the Motion of a Heavy Liquid at Speeds Near the Critical

$$f'' - \frac{1}{2} \frac{(f')^2}{f} = \frac{3}{2} CF - \frac{3}{2} \frac{1}{f} - 3 f^2 + F(f, f_2, x) \quad (2)$$

Here F is an arbitrary given function different from zero in case of an uneven bottom with the equation $y = f_2(x)$. In case of an even bottom, the qualitative investigation of equation (2) is carried out, its exact solution is found out, and the approximate shape of the isolated wave is obtained. It is shown that for Froude numbers less than unity periodic solutions of equation (2) exist which go over into the plane-parallel stream or into the isolated wave. In case of an uneven bottom, also solutions are found out which correspond to the isolated wave and the plane-parallel stream.

Yu. Ivanilov

Translator's note: This is the full translation of the original Russian abstract.

Card 4/4

88902

S/124/61/000/001/001/004

A005/A001

An Investigation of the Motion of a Heavy Liquid at Speeds Near the Critical
 ningrad. Gostekhteorizdat, 1950)

$$\left| \frac{dw}{dz} \right| = \frac{1}{f^2} \left(1 + \frac{2}{3} f f'' \right) + O(\xi^{5/2}).$$

Analogously, the formulae for the determination of the harmonical function ψ are derived for the conditions

$$\psi = u_1(x) \text{ for } y = f_1(x), \quad \psi = u_2(x) \text{ for } y = f_2(x).$$

The second part of the work deals with the solution of the problem of the steady long waves in a heavy incompressible liquid. The problem is solved in non-linear formulation and is reduced to the determination of function w , which conformally maps the region occupied by the liquid onto the unitary strip under the condition

$$\left| \frac{dw}{dz} \right|^2 + 2vf = C \left(v = \frac{gh^3}{Q^2} \right)$$

where $f(x)$ is the equation of free surface, h is the depth of the liquid, Q is discharge, g is the acceleration of the force of gravity, and C a certain functional dependent on f . The replacement of w by its value from formula (1) leads to the ordinary non-linear differential equation for the determination of the shape of the free boundary

Card 3/4

38902

3/124/61/000/001/001/001
A005/A001

An Investigation of the Motion of a Heavy Liquid at Speeds Near the Critical

The solution is sought in the form of a series in ϵ^2 ; as a result it is obtained

$$\psi(x, y) = \frac{y}{f} + \frac{f''f - 2(f')^2}{3!} y (y^2 - f^2) + \dots$$

The asymptotic character is proved of the solution formulated in such a manner for some restrictions imposed on $f(x)$ and its derivatives. The searching of the conjugate harmonical function φ comes to the quadratures:

$$\varphi(x, y) = \int \frac{dx}{f(x)} + \frac{1}{2!} \frac{f'(x)}{f^2(x)} y^2 + \frac{1}{3!} \int \frac{2(f')^2 - ff''}{f} dx + \dots$$

Hence the approximate formula is obtained for the modulus of the boundary derivative function conformally mapping the strip in the z -plane onto the unitary one in the w -plane

$$\left| \frac{dw}{dz} \right|^2 = \frac{1}{f^2} \left[1 + \frac{2}{3} ff'' - \frac{1}{3} (f')^2 \right] + \dots \quad (1)$$

A particular case of (1) is the known formula of M.A. Lavrent'yev (see Lavrent'yev, M.A., Shabat, B.V., Metody teorii funktsiy kompleksnogo peremennogo. Moscow-Leningrad, 1950).

Card 2/4

88902

S/124/61/000/001/001/004
A005/A001

10.2000

Translation from: Referativnyy zhurnal, Mekhanika, 1961, No. 1, p. 50, # 1B316

AUTHORS: Moiseyev, N.N., Ter-Krikorov, A.M.

TITLE: An Investigation of the Motion of a Heavy Liquid at Speeds Near the Critical

PERIODICAL: "Tr. Mosk. fiz.-tekh. in-ta", 1959, No. 3, pp. 25 - 59

TEXT: The authors give a detailed account on a new method of solution in non-linear formulation of the problem of the steady motion of a liquid having a free boundary. In the first part of the work, the asymptotic character of the formulae of M.A. Lavrent'yev is stated in the theory of conformal mappings of narrow strips. The determination of the conformal mapping of the strip near the unitary onto the unitary one is reduced to the searching of the function harmonical in the strip under the conditions

$$\psi = 0 \text{ for } y = 0, \quad \psi = 1 \text{ for } y = f(x).$$

After the extension $\xi = \epsilon x, \eta = y_2$ the Laplace equation assumes the form

$$\text{Card } 1/4 \quad \epsilon^2 \frac{\partial^2 \psi}{\partial \xi^2} + \frac{\partial^2 \psi}{\partial \eta^2} = 0.$$

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900020-6

MOISEYEV, N.N., doktor fiz.-mat.nauk

A hydrodynamic problem in the theory of ships. Trudy VTI
no.3:3-24 '59. (MIRA 13:5)
(Ships--Hydrodynamics)

STOKER, James Johnston, (1905-); LAVRENT'YEV, M.A., red.; MOISEYEV, N.N.,
red.

[Water waves; the mathematical theory with applications] Volny na vode;
matematicheskaya teoriya i prilozheniya. Pod red. M.A.Lavrent'eva i
N.N.Moiseeva. Moskva, Izd-vo inostr. lit-ry, 1959. 617 p.
(Waves) (Hydrodynamics) (MIRA 14:11)

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900020-6

poverkhnostnykh voln; soderzhit perevod s russkogo na angliyskiy i na
sel'skogo i N.N.Moiseeva. Moskva, Izd-vo inostr.lit-ry, 1959.
366 p. (MIRA 12:11)

(Waves)

On the Asymptotic Character of the Formulas of
M. A. Lavrent'yev

SOV/20-123-2-5/53

where $\psi_0 = a_0 y$, $\psi_1 = -\frac{(a_0)''}{3!} y^3 + a_1 y$ etc; here $a_0 = \frac{1}{f}$.

$a_1 = -\frac{a_0'''}{3!} f^2$, ... The determination of $\varphi = \operatorname{Re} w$ is carried out

by the quadrature $\varphi(x, y) = \int \frac{dx}{f(x)} + \frac{1}{2!} \frac{f'(x)}{f^2(x)} y^2 + \frac{1}{3!} \int \frac{2f''^2 - f''f'}{f} dx + \dots$

Theorem: In order that $\Psi_m(x, y) = \sum_{i=0}^m \psi_i$ is an asymptotic

solution of the problem, it is necessary and sufficient that

$f^{(k)}(x) = O(\varepsilon^{l_k})$, where $k=1, 2, \dots, 2m$ and l_k are arbitrary

positive numbers. In this case the solution has the form

$\psi(x, y) = \Psi_m(x, y) + O(\psi_{m+1})$.

In an analogous manner the authors consider more general problems. There are 8 references, 7 of which are Soviet, and 1 English.

PRESENTED: May 13, 1958, by M. A. Lavrent'yev, Academician
SUBMITTED: May 12, 1958

Card 2/2

AUTHORS: Ivanilov, Yu.P., Moiseyev, N.N., and Ter-Krikorov, A.M. SOV/20-123-2-5/50

TITLE: On the Asymptotic Character of the Formulas of M.A. Lavrent'yev (Ob asimptoticheskom kharaktere formul M.A. Lavrent'yeva)

PERIODICAL: Doklady Akademii nauk SSSR, 1958, Vol 123, Nr 2, pp 231-234 (USSR)

ABSTRACT: The authors show that the approximate expressions (obtained by Lavrent'yev [Ref 1,2,3]) for functions mapping conformally almost rectilinear strips, are the first terms of certain asymptotic series.

Let the strip $T_w: 0 \leq \psi \leq 1$ be mapped onto the strip $T_z: 0 \leq y \leq f(x)$ where $w(\infty) = \infty$, $w(z) = \varphi + i\psi$; $z = x + iy$; ψ harmonic in T_z , $\psi = 0$ for $y = 0$, $\psi = 1$ for $y = f(x)$. Put $\varepsilon x = \xi$, $y = \eta$, where ε is a parameter, then ψ satisfies the equation $\varepsilon^2 \frac{\partial^2 \psi}{\partial \xi^2} + \frac{\partial^2 \psi}{\partial \eta^2} = 0$. The solution is sought in the form $\psi = \psi_0 + \varepsilon^2 \psi_1 + \varepsilon^4 \psi_2 + \dots$, where $\psi_1 = 0$ for $y = 0$ and $\psi_0 = 1$, $\psi_1 = \psi_2 = \dots = 0$ for $y = f$. In x and y then

$$\psi(x, y) = \psi_0(x, y) + \psi_1(x, y) + \dots + \psi_k(x, y) + \dots$$

Card 1/2

MOISEYEV, N.N.; TER-KRIKOROV, A.M.

Non-uniqueness of the solution to the underwater foil problem.
Dokl. AN SSSR 119 no.5:899-902 Apr '58. (MIRA 11:6)

1. Moskovskiy fiziko-tekhnicheskoy institut. Predstavleno akademikom
M.A. Lavrent'yevym. (Planing hulls)

**The Non-Uniqueness of the Solution of the
Underwater-Wing Problem**

20-119-5-16/59

surface of a liquid. There are 3 figures and 4 references,
4 of which are Soviet.

ASSOCIATION: Moskovskiy fiziko-tekhnicheskii institut
(Institute of Physics and Technology, Moscow)

PRESENTED: November 20, 1957, by M. A. Lavrent'yev, Member, Academy of
Sciences, USSR

SUBMITTED: November 20, 1958

Card 3/3

The Non-Uniqueness of the Solution of the Underwater-Wing Problem

20-119-5-16/59

The plane problem of the theory of an underwater wing in dimensionless variables is reduced to the determination of the analytical function $w(z)$ satisfying the conditions of circumflow, the asymptotic conditions $\lim y = 1$ and the condition of the constant character of the pressure on the slow line L $x \rightarrow -\infty$. The course of the computation is traced step by step. Also an equation for the approximate description of the form of the free boundary is deduced. This equation is then specialized and solved for several special cases. Already the most simple analysis of the non-linear problem shows several qualitative characteristic features of the underwater wing which can principally not be investigated within the frame of the linear theory. The picture of the non-uniqueness can qualitatively be represented in a schematic way in the plane $Re Q$ (amplitude-consumption). This solution is here represented in a diagram for special cases. Various hydrodynamic characteristics of the underwater wing correspond to various kinds of circumflow. Finally the author investigated as an example the motion of a vorte under the

Card 2/3

AUTHORS: Moiseyev, N. N., Ter-Krikorov, A. M. 20-119-5-16/59

TITLE: The Non-Uniqueness of the Solution of the Underwater-Wing Problem (O neyedinstvennosti resheniya zadachi o podvodnom kryle)

PERIODICAL: Doklady Akademii Nauk SSSR, 1958, Vol. 34, Nr 5, pp. 899-902 (USSR)

ABSTRACT: A. M. Ter-Krikorov (reference 1) investigated this problem in a non-linear way for Frud's numbers greater than 1. The non-linear treatment makes possible the determination of various facts which can not be discovered in linear treatment. The most interesting results are supplied by the non-linear theory in the investigation of flows for Frud's numbers close to 1. On these conditions the problem of the circumflow has a non-unique solution. The existence of two kinds of circumflow was for the first time found by G. S. Sukhomel (reference 2). N. N. Moiseyev noticed this fact theoretically in the investigation of the circumflow of an uneven bottom.

Card 1/3

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900020-6

MOISEWICH, H.H. (Moskva)

Nonlinear oscillations in a limited volume of liquid. Prikl.mat.
1 mekh. 22 no.5:612-621 8-0 '58. (MIRA 11:11)
(Oscillations)

MOISEYEV, N.N., doktor fiz.-mat.nauk

~~_____~~
Oscillations of a body floating in a limited volume of liquid. Trudy
MFTI no.1:145-166 '58. (MIRA 12:1)
(Oscillations)

MOISEYEV, N. N.

Studies of Mechanics and Applied (cont.) 1035
 Mathematics, Moscow, Oborongiz, 1958, 218pp. (Ed. Sokolovskiy, V. V.)
 modulus of elasticity of KAST-V; 7) Stress-strain relationship of KAST-V for different directions in the temperature function; 8) Dependence of the modulus of elasticity of KAST-V on temperature for various directions. 9) The value of Poisson's ratio for KAST-V in temperature function for various directions.

Moiseyev, N.N., Doctor of Physical and Mathematical Sciences. 145
 Oscillations of a Body Floating in a Bounded Reservoir.
 The article contains the following sections: Introduction; 1) Potential of velocities; motion equation. Mathematical statement of a problem; 2) General properties of the solution of the system (1.16); 3) Some remarks on the effective determination of principal oscillations; 4) Supplements and generalizations.

Pokhozhayev, S.I. A Problem of Supersonic Flow 167
 The article contains the following sections. Introduction; 1) Interaction of centered waves; 2) Reflection from a

Card 5/6 1/1

Oscillations of Bodies Floating in a Bounded Reservoir

20-114-6-12/54

apply also in this case.

Theorem 2: On the motion of systems with n bodies in a bounded volume of liquid around the position of equilibrium there exist main oscillations (i.e. periodic oscillations of the transformed system of equations given here). The frequencies ω_2 of these oscillations are real and form an infinite series

$$\omega_n^2 \rightarrow \infty$$

$$n \rightarrow \infty$$

Theorem 3: It is necessary and sufficient for the stability of the periodic oscillations of this system that $h^2 > 0$ ($s = 1, 2, \dots, 6n$) is valid. Furthermore theorem IV is valid: (Principle of superposition): The problem of the main oscillations is complete. Finally several more mathematical theorems are given. There are 4 references, 4 of which are Slavic.

ASSOCIATION: Calculation Center of the AS USSR (Vychislitel'nyy tsentr Akademii nauk SSSR)

PRESENTED: January 19, 1957 by M. A. Lavrent'yev, Academician

SUBMITTED: January 14, 1957

Card 3/3

Oscillations of Bodies Floating in a Bounded Reservoir

20-114-6-12/54

b) by the equation of moments

$$I_s^{(k)} \frac{d^2 x_s^{(k)}}{dt^2} + \sum_{r=1}^6 \sum_{m=1}^n m_{sr}^{(km)} \frac{d^2 x_r^{(m)}}{dt^2} + \int_s \gamma_s^{(k)}(P) \frac{d^2 \xi(P, t)}{dt^2} dP + \sum_{i=1}^6 a_{is}^{(k)} x_i^{(k)} = Q_s^{(k)}$$

(k = 1, 2, ..., n, s = 4, 5, 6)

c) by the equation of the conservation of pressure on the free surface

$$\oint_a H(P, Q) \frac{d^2 \xi(Q, t)}{dt^2} dQ + \sum_{i=1}^6 \sum_{j=1}^n \frac{d^2 x_i^{(j)}}{dt^2} \gamma_i^{(j)}(P) + \rho g \xi(P, t) =$$

= 0. The terms used here are explained. The above-mentioned system of equations is then transformed for reasons of convenience. If it is assumed that $\xi \equiv 0$ and $Q^{(k)} = 0$, the above-mentioned system of equations is an ordinary conservative system. Certain theorems derived in preliminary works

Card 2/3

AUTHOR: Moiseyev, N. N.

20-114-6-12/54

TITLE: Oscillations of Bodies Floating in a Bounded Reservoir
(O kolebaniy tel, plavayushchikh v vodoyame ogranichennykh razmerov)

PERIODICAL: Doklady Akademii Nauk SSSR, 1957, Vol. 114, Nr 6, pp. 1180-1183 (USSR)

ABSTRACT: Within the framework of the linear theory of waves the problem of the oscillation of a system of n bodies floating on the surface of a bounded volume of liquid is examined here around the position of equilibrium.

Theorem 1: The small common oscillations of a heavy liquid in a bounded reservoir and of n bodies floating on its surface is described by the following system of equations:

a) by the equation of motion

$$M_k \frac{d^2 x_s^{(k)}}{dt^2} + \sum_{r=1}^6 \sum_{m=1}^n m_{sr}^{(km)} \frac{d^2 x_r^{(m)}}{dt^2} + \int \gamma_s^{(k)}(P) \frac{d^2 \xi(P,t)}{dt^2} +$$

$$+ \mu_{k3}^{(k)} \delta_{3s} = Q_s^{(k)}. \quad (k = 1, 2, \dots, n, \quad s = 1, 2, 3)$$

Card 1/3

On the Nonuniqueness of the Possible Forms of a 40-21-6-18/18
Steady Motion of Heavy Liquids for Froude-Numbers Which are Approx-
imately Equal to 1

exist in any case. Since the investigations are based on the theory of approximate conformal mappings, they are of approximation character; theorems of existence are not treated. By the way a new approximation theory for a single wave is developed in the paper. The theory presented by the author is not at all complete, since the problem of the possible existence of other forms of equilibrium which are different from the considered one was not dealt with. There are 5 figures and 3 references, 2 of which are Soviet, and 1 English.

SUBMITTED: June 15, 1957

AVAILABLE: Library of Congress

1. Heavy elements-Motion

Card 2/2

USCOMM-DC-54,939

AUTHOR: Moiseyev, N.N. (Moscow) 40-21-6-19/15

TITLE: On the Nonuniqueness of the Possible Forms of Steady Motion of Heavy Liquids for Froude-Numbers Which are Approximately Equal to 1 (O neyedinistvennosti vozmozhnykh form ustanovivshikhsya techeniy tyazheloy zhidkosti pri chislakh Frouda blizkikh k yedinitse)

PERIODICAL: Prikladnaya Matematika i Mekhanika, 1957, Vol 21, Nr 6, pp 860-864 (USSR)

ABSTRACT: It is well-known that for flows of a heavy liquid the Froude-number determines the character of the flow. For Froude-numbers which are equal to one a critical point occurs in which the flow can essentially change. It must be expected that for Froude-numbers in the neighborhood of this critical value two different forms of stationary flows can exist. In the present paper the author applies a theorem of Lavrent'yev [Ref 2] for the solution of the purely mathematical problem of the uniqueness of the solution in the neighborhood of the critical point. Although this kind of treatment consists in an approximation method, the non-linear character of the problem maintains. It is shown that for Froude-numbers which are approximately equal to one, two possible forms of flow can

Card 1/2

On the Oscillations of a Solid Body in the Interior of Which There is a Fluid With a Free Surface

$$\left\| \int_V \delta_{jk} - \frac{1}{8\pi} \left(\xi_j(P) \xi_k(P) \right) dP \right\| \quad j, k = 1, \dots, 6$$

is positive definite (δ_{jk} - Kronecker's δ). Then all frequencies ω_n are real and $\omega_n^2 \rightarrow \infty$ as $n \rightarrow \infty$. Besides then on the metric of the L_2 , (2) is a complete system of solutions. In this case the Cauchy problem has a unique solution defined for all t if the $\xi_j(t)$ are of bounded variation on every finite interval.

There are 8 references, 7 of which are Soviet and 1 American.

SUBMITTED: March 9, 1956
AVAILABLE: Library of Congress

1. Solids--Oscillations--Theory

Card 3/3

On the Oscillations of a Solid Body in the Interior of Which 40-21-2-3/21
There is a Fluid With a Free Surface

$z = \zeta(P, t)$ is the equation of the free surface; v_i and μ_i are functions of the point which are determined only by the geometrical properties of the cavity; μ_i^2 are constants which determine the conservative reforces; $Q_i(t)$ - outer forces; S - the plane domain corresponding to the free surface in the state of equilibrium; ρ - density of the fluid; γ - constant field tension; $H(P, Q)$ - the Green's function for the Neumann's problem for the domain occupied by the fluid. The motions for $Q_i \equiv 0$ are said to be free oscillations.

With the aid of function-theoretical methods the authors prove: For motions of the considered body around the state of equilibrium there appear normal oscillations, i.e. (1) has solutions of the form

$$(2) \quad Y_{jn} = q_{jn} e^{i\omega_n t}, \quad \zeta_n = z_n e^{i\omega_n t} \quad (i=\sqrt{-1}, j=1, \dots, 6).$$

In order that the state of equilibrium is stable (i.e. (2) remains bounded for all t) it is necessary and sufficient that the matrix

AUTHOR: Kreyn, S. I., Moiseyev, L. N. (Voronezh, Moscow) 40-21-8-3/80
TITLE: On the Oscillations of a Solid Body in the Interior of Which There is a Fluid With a Free Surface (O kolebaniyakh tverdogo tela, soderzhashchego zhidkost' so svobodnoy poverkhnost'yu)
PERIODICAL: Prikladnaya Matematika i Mekhanika, 1957, Vol 21, Nr 2 pp 169-174 (USSR)

ABSTRACT: Under the influence of conservative forces a solid body with a cavity partially filled with a fluid carries out small oscillations which are described by the following equations (due to N.N. Moiseyev, Thesis, Mathematical Institute, Academy of Sciences, Moscow 1955):

$$\begin{aligned}
 & Y_i'' + \int_S \chi_i(P) \zeta''(P, t) dP + \mu_i^2 Y_i + \int_S \nu_i(P) \zeta(P, t) dP = Q_i(t) \\
 & (i=1, \dots, 6) \\
 & \int_S \zeta(P, t) + \int_S H(P, t) \zeta''(Q, t) dQ + \sum_{n=1}^6 Y_n'' / \mu_n(P) + \sum_{n=1}^6 Y_n \nu_n(P) = 0
 \end{aligned}
 \tag{1}$$

Here the Y_i are the generalized coordinates of the body,

Card 1/3

PA - 2202

On the Flow of a Heavy Liquid traversing a wave-like Bottom.

Here the general methods by LYAPUNOV-SCHMIDT are best employed. The existence of a solution with small standards follows from the general theorems and the problem is reduced to the analysis of the coefficients of the bifurcation equations.

The bifurcation solutions are investigated by the method of LYAPUNOV and the result found is represented graphically. All properties of the flow can be determined by the solution found.

The general problem is now investigated; the solutions of the system of equations with small standards are constructed with the help of the general method by LYAPUNOV-SCHMIDT. Also in this case results can be represented graphically. A corresponding diagram shows the existence of the known analogy between the nonlinear motion of a liquid traversing an uneven bottom and the nonlinear oscillations of system with a degree of freedom. The shape of the free surface can be studied by means of the solution found. The shape of this surface depends upon velocity.

(6 illustrations)

ASSOCIATION
PRESENTED BY
SUBMITTED
AVAILABLE

Not given
25. 7. 1956
Library of Congress.

Card 2/2

AUTHOR	MOISEYEV, N.N.	PA - 2202
TITLE	On the Flow of a Heavy Liquid traversing a wave-like Bottom (O techenii tyazheloy zhidkosti nad volnistym dnom).	
PERIODICAL	Prikladnaia Matematika i Mekhanika, 1957, Vol 21, Nr 1, pp 15-20 (U.S.S.R.)	
ABSTRACT	Received 3/1957	Reviewed 4/1957

The author reduces the present problem to integral equations, and by the methods developed by LYAPUNOV-SCHMIDT he constructs such solutions as warrant a complete investigation of the solutions with small standards for any values of flow velocity. The author here investigates the problem of the possible forms of equilibrium of the free surface of the flow of a heavy liquid which becomes steady.

These liquid flows traversing a bottom the ordinate of which is a periodic function of x and is symmetric with respect to two vertical straight lines (drawn through the wave peak and the middle of the wave trough). As flow parameters those of A.I. NEKRASOV are here chosen, e.g. the mean value of horizontal velocity c at $y = 0$ and the consumption of liquid Q (or the mean height $h = Q/c$). The equations of the free surface are derived and explicitly given. A BERNOULLI integral must apply along the free surface and a condition is also given for the bottom. Further, a condition for flow and a condition for the constancy of pressure of the free surface is found. Now the problem is reduced to a system of integral equations. NEKRASOV's problem can be derived from the problem investigated here. In this way an integral equation with a steady operator which is equivalent to NEKRASOV's equation is obtained.

Card 1/2

SOV/124-57-9 10376

A Problem on the Motion of a Solid Body Containing Fluid Masses (cont.)

of certain impact phenomena for the evaluation of the dynamic characteristics of a ship containing within its hold a large quantity of liquid, as well as to a number of other problems.

Annotation

Card 2/2

Translation from: Referativnyy zhurnal, Mekhanika, 1957, Nr 9, p 70 (USSR) SOV/124-57-9-10376

AUTHOR: Moiseyev, N. N.

TITLE: A Problem on the Motion of a Solid Body Containing Fluid Masses Having a Free Surface (Zadacha o dvizhenii tverdogo tela, soderzhashchego zhidkiye massy, imeyushchiye svobodnuyu poverkhnost')

PERIODICAL: Tr. 3-go Vses. matem. s"yezda. Vol I. Moscow, AN SSSR, 1956, pp 206-207

ABSTRACT: Under the premise of linearity the above-indicated problem is converted into a system of integral-differential equations. A certain special fully orthonormalized system of eigenfunctions is introduced. The system of integral-differential equations is reduced to an infinite system of differential equations in a certain Hilbert space H . This system proves to be a system of Lagrange equations in terms of the chosen variables. The article proves the solubility in H of the infinite system obtained and the discreteness of the spectrum, and the asymptoticity of the eigenvalues is studied. Analogs are established of the classical theorems of analytical mechanics, i. e., the theorems of Thomson and Lagrange. The theory developed is applied to the study

Card 1/2

MOYSEYEV, Nikita Nikolayevich

MOYSEYEV, Nikita Nikolayevich (Rostov-on-Don State U), Academic Degree of Doctor of Physico-Mathematical Sciences, based on his defense, 3 November 1955, in the Council of the Mathematical Institute imeni Steklov, Academy USSR, of his dissertation entitled: "Research on the motion of a solid body containing liquid masses with a free surface."

For the Academic Degree of Doctor of Sciences.

Byulleten' Ministerstva Vysshego Obrazovaniya SSSR, List NO.7, 31 March 1956
Decision of Higher Certification Commission Concerning Academic Degrees and Titles,

JPRS 512

Title : On a problem in the theory
of liquid

Periodical : Prikl. Mat. i Mekh., 19, 343-347, May-June 1955

Abstract : The author solves the problem of determining the motion of a heavy liquid in an open vessel when the pressure on an arch of the vessel is a given periodic function of time. He also shows how to determine the possible periodic motions of a liquid in a vessel for given conditions of constancy of pressure on its arch. He demonstrates the possible generalizations of the problem.

Institution: --

Submitted : December 13, 1954

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900020-6

17 JUL 1968

PROCESSES AND PROPERTIES INDEX

15

MOISEYEV, I. G.

The influence of sodium and potassium on the structure of suspensions of solenoidal acids. I. O. Maslov. *Pedology* (U. S. S. R.) 22, 200-70 (in English 270-40) (1967). Four types of solenoidal acids were used, with Na and K, resp., to various degrees of substitution. Thixotropic and viscosity measurements were taken as the criteria for stability of gels formed from suspensions. These data, in turn served as a measure of the stability of the structure of the acids. The Na gels proved to be more stable than the K gels.

J. S. Joffe

450.314 METALLURGICAL LITERATURE CLASSIFICATION

FROM BOWLING

COLLECTOR

APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134900020-6

Card 1/1

UDC: 523.164.32

ACC NR: AR6035214

SOURCE CODE: UR/0274/66/000/008/A043/A046

AUTHOR: Yefanov, V. A.; Moiseyev, I. G.

TITLE: Methods of observing solar radiation on the 8-mm band

SOURCE: Ref. zh. Radiotekhnika i elektrosvyaz', Abs. #A356

REF SOURCE: Izv. Krymsk. astrofiz. observ., v. 34, 1965, 53-59

TOPIC TAGS: solar radiation, radio telescope, frequency modulation

ABSTRACT: A description is given of an 8-mm band radio telescope with two-frequency modulation which was built at the Crimean Astrophysical Observatory. The frequency modulations are: $F_1 = 180$ cps and $F_2 = 980$ cps. The two-frequency modulation eliminates various interferences and makes it possible to have continuous control of the receiver's amplification and temperature of the reference channel. The range of observation of the radio telescope at half power has a width of 40—45' in a horizontal plane and 35—40' in a vertical plane. The noise temperature is about 15000K, the pass band is 15 Mc, and the mean quadratic fluctuation sensitivity is $\approx 4K$ for an output time constant of 1 μ s. A comparison of experimental and calculated values is given for changes of solar radiation flux on

Card 1/2

UDC: 621.396.67:522:523.164

L 10880-67

ACC NR: AR6034894

(a quarter of the time). The signals on switch-frequencies are separated by selective filters, detected, and recorded on recording instruments. This permits exclusion of the influence of various interferences and realization of amplification control. The radio telescope is equipped with a photoelectric recorder that registers the transparency of the sky in an optic range. Solar radiation has been recorded periodically since the beginning of 1964. Changes in the radio emission flow caused by absorption in the Earth's atmosphere at different altitudes of the source have been analyzed. The brightness temperature averaged on a disc has been defined as equal to $7500 \pm 800\text{K}$. Bibliography has 10 references. T. Antonova. [Translation of abstract]

SUB CODE: 03, 09, 20/

Card 2/2

lm

L 10880-67 EWT(1) GW/WS-2
 ACC NR: ARG034894 SOURCE CODE: UR/0269/66/000/008/0048/0048 30

AUTHOR: Yefanov, V. A. ; Moiseyev, I. G.

TITLE: Method of observations of solar radio emission on the 8-mm wavelength

SOURCE: Ref. zh. Astronomiya, Abs. 8.51.400

REF SOURCE: Izv. Krymsk. astrofiz. observ., v. 34, 1965, 53-59

TOPIC TAGS: solar radio emission, radiometer, radiotelescope, observatory, astrophysics

ABSTRACT: A radiometer with a dual frequency regulator, installed at the Crimean Astrophysical Observatory is described. It has an operating frequency of 3700 Mc and a parabolic mirror antenna 90 cm in diameter on a PSh-4 parallactic unit. The radiometer directivity diagram is 40—50' horizontally and 35—40' vertically. The noise temperature is 15,000K, the transmission band is 15 Mc, the sensitivity is 4K, and the time constant is 1 sec. Two switches insure the successive recording of solar radiation (half the observation time), radiation of the adjacent sector of the sky (a quarter of the time), and of the noise generator

Card 1/2

UDC: 522.617:523.164.32